

Remarks

Applicants thank the Examiner for the consideration given this application.

Reconsideration of this application is now respectfully requested in view of the above amendments and the following remarks.

Claims 1-21 remain pending in this application, with Claims 1 and 10 being independent claims. New Claims 22 and 23, depending from Claim 1, and Claims 24 and 25, depending from Claim 10, have been added. Thus, Claims 1-25 are now pending in this application.

Applicants have furnished a new abstract and a new title in response to the Office Action's objections found at page 2 of the Office Action. Withdrawal of those objections is now respectfully requested.

Various claims have been amended to change their respective wordings to improved wordings. It is respectfully submitted that these wording changes either broaden or do not affect the respective scopes of these claims.

At Pages 3-4, the Office Action rejects Claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable over Jang et al. (U.S. Patent No. 5,862,249) in view of Kuhn (U.S. Patent No. 5,896,463). Applicants respectfully traverse these rejections for at least the following reasons.

Claim 1, as amended, recites:

A method for identifying the orientation of an interesting object (IO) in a digital medical image, the method comprising the steps of: *creating a rectangular interesting image mask* to cover said interesting object *from the original digital medical image*; *generating a rough image based on said interesting image mask*, the rough image coarsely describing the interesting object; and identifying the orientation of said interesting object based on the rough image.
(Emphasis added)

It is respectfully submitted that the references do not teach or suggest the invention as claimed.

In particular, the Office Action states that in Kuhn, "A mask image is created based on the original image and a threshold criteria. [sic] Using the mask image, an area of pixels having a common intensity value, or a cluster of pixels, is used to define the ROI." Office Action at page 3 (citing Kuhn at col. 3, lines 12-25). However, a careful reading of this, as well as the cited portion of Kuhn and Kuhn at col. 6, lines 22-29, reveals that **Kuhn's mask image is a rough image and thus cannot be used to create what it already is.**

It is further noted that Kuhn's mask image is not created using a rectangular interesting image mask, as claimed.

It is additionally noted that Kuhn's mask image is created based on a thumbnail image and has the same size as the thumbnail image. Kuhn at col. 6, lines 22-29. Therefore, Kuhn's mask image also does not cover the interesting object from the original image.

Furthermore, there is nothing rectangular about Kuhn's mask image. Kuhn's masking takes whatever shape the pixels happen to define. See, again, Kuhn at col. 6, lines 22-29.

Therefore, Kuhn's mask image does not correspond to a rectangular interesting image mask, as claimed in Claim 1. Therefore, Kuhn fails to remedy the deficiencies of Jang et al. discussed in the Office Action at page 3 (i.e., the lack of the rectangular interesting image mask and its use to create a rough image). For at least these reasons, therefore, Claim 1, as well as its dependent claims (Claims 2-9) are allowable over the cited references.

Claim 10, as amended, recites:

A method for segmenting digital medical images, the method comprising the steps of: *creating a rectangular interesting image mask* to cover an interesting object *from an original digital medical image*; *generating a rough image based on said interesting image mask*, the rough image coarsely describing said interesting object; and performing a post-process on said rough image.
(Emphasis added)

As noted from the portions of Claim 10 emphasized, Claim 10 contains some limitations similar to those of Claim 1. As noted above, these limitations are disclosed or suggested by neither Jang et al. nor Kuhn. Therefore, for at least the reasons noted above, Claim 10 is allowable over the cited references, as are its dependent claims, Claims 11-21.

New Claims 22-25, which depend from Claims 1 or 10, directly or indirectly, have been added. These claims recite that the rough image is a binary image and that its generation involves the use of a fuzzy clustering algorithm and that the fuzzy clustering algorithm comprises a Gaussian clustering method. These limitations are supported, for example, by the specification at paragraph [0061]. It is respectfully submitted that Claims 22-25 are allowable for at least the same reasons as Claims 1 and 10, as well as because their limitations are, furthermore, not taught by the cited references.

It is noted that the above discussion may not address all possible arguments that may be made in connection with the Office Action. It should not be understood from this that Applicants concur with any characterizations of the claims and/or the cited references that have not been address. Furthermore, Applicants do not waive further arguments.


Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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